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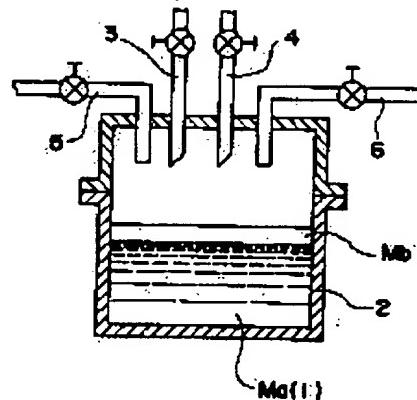
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## (54) PRODUCTION OF PLASTIC OPTICAL ELEMENT HAVING REFRACTIVE INDEX DISTRIBUTION

### (57) Abstract:

PURPOSE: To obtain easily an element having a refractive index distribution by polymerizing partly a monomer to form a transparent gel-like material, adding another monomer which provides a polymer having a different refractive index to the surface, diffusing the monomer from the surface in a perpendicular direction to polymerize the monomers and subjecting the polymer to curving.  
 CONSTITUTION: A monomer Ma forming a net-like polymer having a refractive index Na (e.g., diallyl phthalate) is poured into a cylindrical vessel 2 and is partly polymerized by heating to form a transparent gel object 1. A monomer Mb which forms a polymer having the refractive index different from the refractive index of Na (e.g., ethyl acrylate) is poured onto the surface of the object 1 and is diffused from the surface in a perpendicular direction; at the same time said monomers are polymerized by heating to form a refractive index distribution in which the refractive index changes continuously in one direction into the object 1. The object is heated in succession to complete the polymn. and to fix the refractive index distribution. The one surface of the resulted polymer is worked to have a curved surface by which the optical element having the refractive index distribution is obtd.



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